

WHAT IS CLAIMED IS:

1. A method for preparing a heat-resistant thermoplastic resin composition having an excellent heat stability comprising the steps of:
 - a) a preparing graft ABS polymer through emulsion polymerization by
5 comprising:
 - i) 40 to 70 wt parts of conjugated diene rubber latex;
 - ii) 15 to 40 wt parts of aromatic vinyl compound; and
 - iii) 5 to 20 wt parts of vinyl cyanide
 - b) a preparing copolymer having heat-resistant through mass
10 polymerization by comprising:
 - i) 50 to 80 wt parts of aromatic vinyl compound; and
 - ii) 20 to 50 wt parts of vinyl cyanide; and
 - c) a mixing the graft ABS polymer and the copolymer having heat-resistance.
- 15 2. The method according to claim 1, wherein the conjugated diene rubber latex of a) i) step has 2500~5000 Å of average particle size, and 70~95 % of gel content, and 12~30 of swelling index.
3. The method according to claim 1, wherein the graft rate of graft ABS polymer of a) step is over 26%.
- 20 4. The method according to claim 1, wherein the molecular structure of heat-resistant copolymer of b) step comprises less than 15% chain of alphas-methyl styrene-alphas-methyl styrene-alphas-methyl styrene (AMS-AMS-AMS), and less than 40% chain of alphas-methyl styrene-acrylonitrile-acrylonitrile (AMS-AN-AN).
- 25 5. The method according to claim 1, wherein the conjugated diene rubber latex of a) i) step is an aliphatic conjugated diene compound mixture, or a mixture of the aliphatic conjugated diene compound and unsaturated monomer of ethylene-based.
6. The method according to claim 1, wherein the aromatic vinyl
30 compound of a) ii) step is selected from the group consisting of styrene, a -

methyl styrene, o -ethyl styrene, p -ethyl styrene, and vinyl toluene.

7. The method according to claim 1, wherein the vinyl cyanide of a)iii)step is selected from the group consisting of acrylonitrile, methacrylonitrile, and ethacrylonitrile.

5 8. The method according to claim 1, wherein the aromatic vinyl compound of b) i)step is selected from the group consisting of styrene, α -methyl styrene, o -ethyl styrene, p -ethyl styrene, and vinyl toluene.

9. The method according to claim 1, wherein the vinyl cyanide of b)ii)step is selected from the group consisting of acrylonitrile, methacrylonitrile,
10 and ethacrylonitrile.

10. The method according to claim 1, wherein the mixing ratio of c)step is 20 to 80 wt parts of graft ABS polymer and 80 to 20 wt parts of copolymer having heat-resistance.

11. The method according to claim 1, wherein the mixing of c)
15 comprises further an additive selected from the group consisting of antiadditive, oxidation inhibitor, light stabilizer.

12. The method according to claim 1, wherein the conjugated diene rubber latex of a) i)step prepared by comprising the steps of:

first, reacting for 7~12 hrs at 50~65 °C by adding in a lump 100 wt
20 parts of conjugated diene, 1~4 wt parts of emulsifier, 0.1~0.6 wt parts of polymerization initiator, 0.1~1.0 wt parts of the electrolyte, 0.1~0.5 wt parts of the molecular weight controlling agent, and 90~130 wt parts of the ion exchange water in polymerization reactor;

preparing the conjugated diene rubber latex having a small diameter,
25 which is that average particle diameter 60~1500 Å, the gel content is 70~95 %, the swelling index is 12~30, by the second reacting for 5~15 hrs at 55~70 °C by further adding in a lump 0.05~1.2 wt parts of the molecular weight controlling agent; and

preparing the conjugated diene rubber latex having a large diameter,
30 which is that average particle diameter 2500~5000 Å, the gel content is

70~95 %, the swelling index is 12~30, by increasing the particle and followed by stopping of stirring by adding under stirring for 1 hr 2.5~4.5 wt parts of aqueous of solution of acetic acid in 100 wt parts of the conjugated diene rubber latex having a large diameter.

- 5 13. The method according to claim 1, wherein graft ABS polymer of a)step prepared by comprising the steps of:

by adding

- 10 i) 40 to 70 wt parts of conjugated diene rubber latex;
 ii) 15 to 40 wt part of aromatic vinyl compound;
 iii) 5 to 20 wt part of vinyl cyanide compound;
 iv) 0.2 to 0.6 wt parts of emulsifier;
 v) 0.2 to 0.6 wt parts of the molecular weight controlling agent; and
 vi) 0.1 to 0.5 wt parts of the polymerization initiator
 in polymerization reactor, and

- 15 by graft copolymerizing under condition of 45' to 80 °C of polymerization temperature and 3 to 5 hrs of the polymerization time.

14. The method according to claim 13, wherein the method of adding is selected from the group consisting of addition method in a lump, multi-step addition method, and continuous addition method.

- 20 15. The method according to claim 13, wherein the emulsifier is at least one selected from the group consisting of alkyl aryl sulfonate, alkalimetal alkyl sulfate, sulfonated alkyl ester, soap of fatty acid, and alkali salts of rosinat.

- 25 16. The method according to claim 13, wherein the polymerization initiator is at least one selected from the group consisting of cumene hydroperoxide, diisopropyl benzene hydroperoxide, persulfate, sodium formaldehyde sulfoxylate, sodium ethylene diamine tetraacetate, ferrous sulfate, dextrose, sodium pyrrolinate, sodium sulfite.

17. The method according to claim 1, wherein the heat-resistant copolymer of b)step prepared by comprising the steps of:

- 30 by mixing

- i) 50 to 80 wt part of aromatic vinyl compound;
- ii) 20 to 50 wt part of vinyl cyanide compound;
- iii) 26 to 30 wt parts of solvent; and
- iv) 0.1 to 0.5 wt parts of the molecular weight controlling agent

5 in polymerization reactor, and

by mass polymerizing under condition of 140 to 170 °C of polymerization temperature and 2 to 4 hrs of the polymerization time.